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IMAGES IN CARDIOLOGY

Angiographic Evidence of Reperfusion Injury After Carotid Artery Stenting

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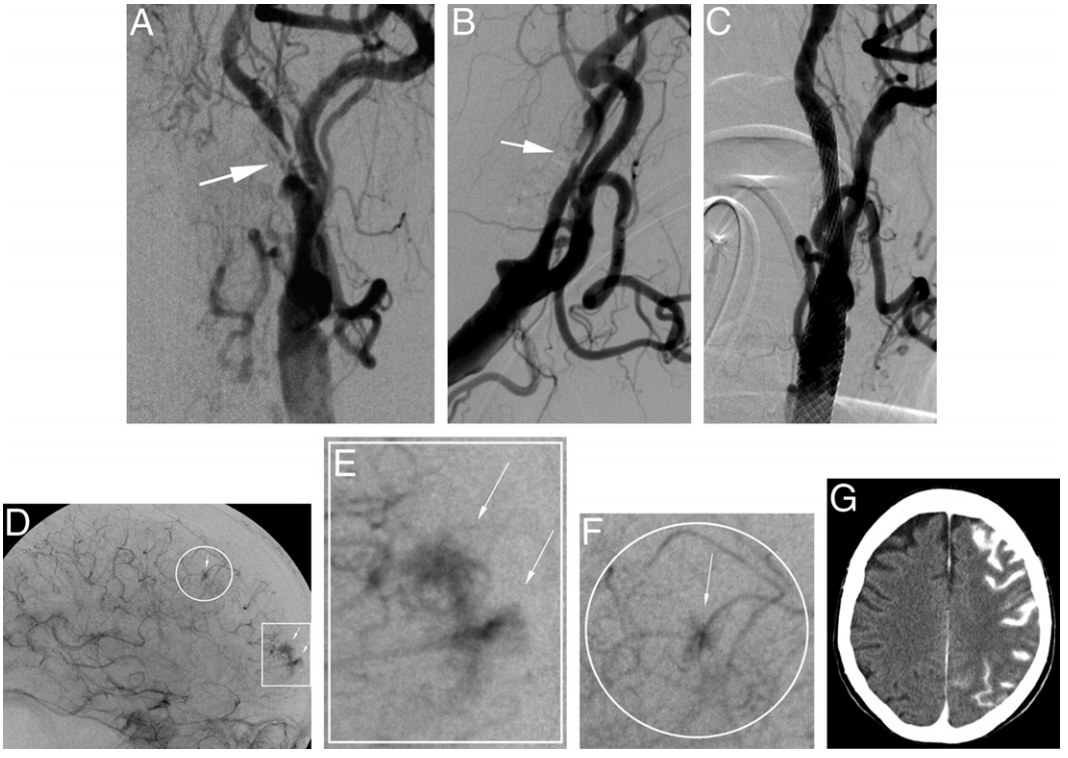

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A 78-year-old woman presented with a 99% symptomatic stenosis of the left internal carotid artery **(A and B)**, which was treated with carotid artery stenting **(C)**. Directly after stent implantation, the patient presented with a headache without further neurological deficits. The post-procedural intracranial angiography showed contrast agent extravasation in 2 different small peripheral arteries of the middle cerebral artery territory (**D, E, F**, Online Video 1). Computed tomography showed contrast agent in the subarachnoid space **(G)**. This novel angiographic finding supports the most widely held theory that hyperperfusion syndrome occurs as a result of impaired autoregulation of cerebral blood flow. The chronic low-flow state induced by severe carotid disease results in a compensatory dilation of cerebral vessels distal to the stenosis. The vessels lose their ability to autoregulate, which results in increased cerebral blood flow after revascularization and can lead to hemorrhage (1).

REFERENCE

1. Abou-Chebl A, Yadav JS, Reginelli JP, Bajzer C, Bhatt D, Krieger DW. Intracranial hemorrhage and hyperperfusion syndrome following carotid artery stenting. J Am Coll Cardiol 2004;43:1596–601.